

LOS ALAMOS NATIONAL LABORATORY CURRENTS

OCTOBER 2009

TA-49 hosts the Hazmat Challenge



Problem solvers find ways for Lab technology to help industry

LANL Star used setbacks to become better engineer

 **Los Alamos**
NATIONAL LABORATORY
EST. 1943

Maintaining a healthy workplace during flu season

Autumn in the southwest means an explosion of fall colors, kids going back to school, and crisp weather. Unfortunately, it's also the onset of flu season.

As one of the premier occupational medicine practices within the Department of Energy complex and nationally, Occupational Medicine stands ready to assist our employees. Our goal is prevention and management of occupational and environmental injury and illness, coupled with the promotion of health and productivity of workers, their families, and our communities. To ensure that the Laboratory workforce is prepared for the upcoming flu season, Occupational Medicine is working with local schools, city and state officials, and the New Mexico Department of Health to provide employees the most current information on seasonal and H1N1 flu.

All of us play a role in maintaining a healthy workplace. Prepare for the upcoming flu season by taking a few minutes to learn the latest news and facts about the H1N1 virus and what to do if you get sick. Bookmark the U.S. Department of Health and Human Services flu preparedness Web site at www.flu.gov.

Follow the U.S. Centers for Disease Control and Prevention's recommendations and cover your coughs and sneezes and frequently wash your hands with soap and water, or use an alcohol-based hand sanitizer if soap and water are unavailable. Frequently clean all commonly touched surfaces in the workplace, such as workstations, countertops, and doorknobs.

One of the most important things you can do to help maintain a healthy workplace is to stay home if you are sick with a fever and cough or sore throat. The CDC recommends that workers who are sick stay home until at least 24 hours after their temperature falls below 100 degrees Fahrenheit and signs of fever, such as chills, feeling warm, sweating, or looking flushed disappear.

Occupational Medicine supplied each directorate with an influenza information packet filled with information for dissemination to employees. The packet contains posters as well as specific steps that employees can take to stay healthy this flu season.

Be sure to visit Occupational Medicine's Web site at http://int.lanl.gov/health/occmmed/swine_flu.shtml frequently for updates on vaccine availability as well as answers to commonly asked questions. You can sign up to receive periodic e-mails on health news and topics. Or call Occupational Medicine at 7-7890. At this time, the New Mexico Department of Health has not determined if the Laboratory will be provided with H1N1 vaccine.

During this flu season and year-round, know that Occupational Medicine remains devoted to the health and productivity of all Laboratory workers.

— **Dr. Michelle Eaton, Occupational Medicine Division leader**



LeRoy N. Sanchez

About the cover: Two emergency responders work to contain a spill on an overturned tanker truck as part of the Hazmat Challenge at Technical Area 49. See page 4 for the story. Photo by LeRoy Sanchez.

Padilla, Bowles receive Who's Who in Technology award

Tom Bowles of Science, Technology, and Engineering and Belinda Padilla of Technology Transfer (TT) Division received the *New Mexico Business Weekly* Who's Who in Technology Award.

The award recognizes and spotlights the accomplishments of 26 people who are keeping the state on the cutting edge of technological advances. Honorees are selected from both the public and private sector and represent different industries and key roles within technology.

Padilla is a program manager in TT Division and leads a team responsible for the Laboratory's entrepreneurial programs and efforts to stimulate new regional business development based on technology and expertise.

Bowles is currently on leave from the Laboratory as science advisor to Governor Bill Richardson. He was elected an American Physical Society Fellow in 1993, a Los Alamos Fellow in 1994, and a Fellow of the American Association for the Advancement of Science in 2006. Bowles was the chief science officer at the Lab from 2004 to 2006. He has served on a number of Laboratory, national, and international committees, was a recipient of a Laboratory Distinguished Performance Award, and received the Markov Prize from the Institute for Nuclear Research of the Russian Academy of Sciences.

Student Symposium winners named

Four students and mentors were recognized as distinguished performers at the 2009 Student Symposium.

Students Christina Hanson of Applied Modern Physics, Cynthia R. Rivera of Industrial Hygiene and Safety, Tanya Vandebusch of Theory, Simulation, and Computation, and Michael Jablin of the Lujan Center at the Los Alamos Neutron Science Center received Distinguished Performance awards.

David R. Montoya of High Performance Computer Systems, David Poston of International and Nuclear Systems Engineering, Steve Valone of Structure and Property Relations, and Harshini Mukundan of Physical Chemistry and Applied Spectroscopy were recognized as Distinguished Mentors.

Several other students were recognized at the symposium. To read the complete list of Student Symposium winners go online to <http://www.lanl.gov/education/symposium/>.

Proffen elected to NSSA committee

Thomas Proffen of the Los Alamos Neutron Science Center was elected communicating secretary for the Neutron Scattering Society of America, a position on its Executive Committee.

The Society, which is active in neutron user technical meetings and education and training, is an organization of persons who have an interest in neutron scattering research in a wide spectrum of disciplines.

Proffen is the neutron powder diffractometer instrument scientist at the Lujan Neutron Scattering Center. He received his doctorate in crystallography from the University of Munich.

LANSCE Director's Excellence Award Presented

Sven Vogel of the Lujan Center at the Los Alamos Neutron Science Center received the 2009 LANSCE Director's Excellence Award for his achievements in publishing papers with scientists from around the world on phase transformations in metals, alloys, and geomaterials.

Among other projects, in studies led by H.R. Wenk of the University of California, Berkeley, Vogel investigated the texture memory effect in metals and rocks.

Former LANSCE Deputy Director Roger Pynn established the LANSCE Director's Award in 1999, to recognize the scientific excellence and leadership of a Laboratory staff member strongly involved with LANSCE, either through his or her own research program, collaborations with LANSCE users, or programmatic development of the scientific program at LANSCE.

Whicker honored by Air Monitoring Users Group

Jeff Whicker of Environmental Data and Analysis received the Mark D. Hoover/George J. Newton award for outstanding and continuing contributions to the technology of radioactive aerosol measurements from the national Air Monitoring Users Group.

Whicker is a founding member of the group, which provides air-monitoring practitioners with a forum to exchange relevant information, discuss mutual issues and problems, and develop sound technical and unified consensus strategies for air-monitoring practices and regulatory compliance.

Lab's training facility leads state in emergency, terrorism, and hazardous materials response

More than a decade ago, when few Americans were thinking about recycling or reusing, the Laboratory's emergency responders came up with a novel idea: build their own state-of-the-art training facility using recycled and donated props.

Until then, they'd trained at the California Specialized Training Institute near San Luis Obispo, California. The west-coast facility was chosen "because the Lab was under University of California management at the time, and CSTI had one of the best curricula in the country," said Bill Flor of Emergency Operations.

Realizing that having a facility of its own would save the Lab time and travel expenses and allow responders to train on a more regular basis, Emergency Response group members began searching for likely training props in the Lab's salvage area. "It's amazing how many things came out of the Lab's junkyard," Flor said.

They also solicited donations from anyone they could think of. Santa Fe Railroad donated a railcar, which responders promptly turned into a training prop outfitted with chlorine, acid, liquid propane gas, and general service domes.

With the help of dedicated employees and summer interns, the fledgling training area slowly grew into the Emergency Response Training Facility—the only training center in New Mexico certified by CSTI. "It was a real labor of love," Flor said. "Everyone pitched in."

Spread out over several acres at Technical Area 49, the facility boasts a training classroom, an explosive blast pad, robotics operations areas, and various props, including a semi van, a tanker trailer, a transuranic waste transportation container, a cryogenic tanker trailer, a confined space entry trainer, and other decommissioned vehicles, said Jeff Dare of Emergency Response. The props can be modified to create scenarios that mimic real-life situations, such as those involving improvised explosive devices, suspicious packages sent in the mail, booby-trapped buildings, and clandestine drug labs.

The center really comes to life in late summer, when the Lab holds the annual Hazmat Challenge. "The Challenge is an event where you can have fun and forget you are learning at the same time," Flor said. "For the past 13 years, Hazmat teams from New Mexico, Texas, Arizona, and Oklahoma have participated to network, practice technical skills, and learn new Hazmat techniques under realistic conditions in a safe environment." The scenarios get better each year as teams provide feedback and coordinators incorporate lessons learned and contemporary Hazmat issues, he said.

The center also has seen its share of bomb technicians. The Lab alternates with Sandia National Laboratories to host the Robot Rodeo sponsored by the International Association of Bomb Technicians and Investigators. During this event, bomb squads from state and local police departments, Air Force bases, and national laboratories compete by using robots to handle a variety of dangerous tasks. In addition to being a contest among



Photo courtesy of Emergency Operations

Emergency responders compete in a damming and diking exercise involving an overturned tanker.

Hazardous Materials Response training courses and exercises

- CSTI Hazmat Technician and Specialist
- CSTI Technician for Industry
- First Responder Awareness
- First Responder Operations
- Training in the use of chemical and biological, radiation and nuclear, and chemical identification instrumentation
- Confined-space response
- Weapons of Mass Destruction Awareness
- Evidence Preservation
- Decon proficiency
- Hazmat refresher
- HAZWOPER
- and many others

LeRoy N. Sanchez



Team members take turns decontaminating each other after completing an exercise.

***“Training together builds community and trust.
If an emergency situation happens, we don’t have
to waste time sizing up one another’s skills
and capabilities.”***

teams of bomb technicians to see who is best versed in using robots to safely remove explosives, the event gives bomb squads throughout the state the opportunity to become familiar with the newest robotic equipment.

The training center provides a wide range of hazardous materials training and exercises to local and area emergency responders, according to Chris Rittner of Emergency Response. It also offers field support to various explosives-related Lab programs, as well as training to Department of Defense personnel and local law enforcement bomb-disposal teams and K-9 explosive detection teams.

Providing training for emergency crews from the Lab, Los Alamos County, and Bandelier National Monument, as well as from surrounding communities, leads to a more effective response in case of an emergency, Dare said. “Training together builds community and trust. If an emergency situation happens, we don’t have to waste time sizing up one another’s skills and capabilities,” he noted.

“It’s a fantastic facility,” said Los Alamos Fire Chief Doug Tucker. “Hazmat situations can be incredibly complicated. Getting hands-on training on actual props is the best training we could get to learn how to respond effectively to such situations.”

— Tatjana K. Rosev

Merging at the intersection of science and industry

Industrial fellows use Lab technology to solve real-world problems

As Procter and Gamble's "boots on the ground," Laboratory employee, Steve Stringer pursues capabilities that have the potential to solve P&G's most important technological challenges. Though based at the Lab, the P&G fellow works one week a month at the company's corporate research and development facilities in Cincinnati, Ohio.

"Together, we look for highly strategic engagements such as reducing dependence on oil or simulating and predicting material behavior," said Stringer. "Ideal collaborations offer world-class scientific research and development challenges to us and promise world-class competitive advantages to P&G if we can find solutions together."

In his role, Stringer brings new funds to the Lab, and his efforts can multiply if the work turns into patents that later generate licensing royalties. There is also a dual-use benefit to Lab divisions in being able to test ideas for which their data may be scarce, he said, albeit for an environment where the application is somewhat different but where the client's data are rich and abundant.

"To the extent that we can talk about our collaborations outside the nondisclosure envelope, it's good for the public to hear that LANL is working on problems that the public cares about, such as reducing dependence on oil," he said. "Especially in a way that manifests itself in familiar, everyday products."

A Lab employee for more than 19 years, Stringer gets satisfaction from helping the world's top scientists connect with projects on some of U.S. industry's top problems, knowing that the potential fruits of their success have commercial value and may someday be in wide use. And, he added, "it's just so entertaining to see the deep scientific commonality between two classes of weapons of mass destruction: nuclear weapons and diapers!"

Stringer's modest goal is to create a significant license revenue stream for the Laboratory. "I think we can strive to do this because that achievement would mean that P&G will have been successful at scaling up and marketing consumer

products based on LANL inventions," he said. "Their success is our success."

Collaborations with industry via Technology Transfer Division's Industrial Fellows Program began in 1995 and enable industry-leading companies to leverage the Lab's world-renowned research and development facilities.

"The goal is to forge long-term, strategic partnerships between the Lab and industry through understanding the technical capabilities and needs of each partner," said Steve Girrens, Technology Transfer Division leader. "Our industrial partners gain a competitive advantage through



Steve Stringer connects Procter and Gamble's business needs with the Lab's basic science, and through this partnership believes we can look forward to using consumer products made from renewable resources.

Sandra Valdez



Richard C. Robinson

innovation, and we in turn are afforded opportunities to commercialize Los Alamos technologies.”

In addition to working with P&G, the Lab has partnered with such companies as PPG Industries, Motorola, 3M, Pfizer, Dow Chemical, Phillips 66, Eastman, General Motors, and Chevron.

Chevron’s current solution broker is 25-year Lab veteran Leigh House, whose challenge is to find ways to apply Lab skills and technologies to solve the practical problems of a vital part of the nation’s energy industry.

Characterizing rock properties and improving downhole well-field wireless communications are among the 15 technical collaborations House facilitates under the Chevron-Los Alamos Alliance for Advanced Energy Solutions Cooperative Research and Development Agreement.

“A topic that is increasingly important to Chevron is materials,” said House. “While the oil industry has considerable experience with traditional metals used in refining, it increasingly needs better understanding of these traditional

Leigh House works with Chevron to increase the efficiency and reduce the carbon footprint of producing and refining crude oil (in sealed jar) into gasoline and motor oil.

materials and their properties to increase the performance and efficiency of refining operations.”

As new types of materials become available with properties such as high strength, low weight, and resistance to corrosion, they may be ideal for use in refining and well completions, explained House.

“Although oil and gas are fossil-energy sources that we want to reduce reliance on, they will continue to be an essential source of energy for the nation for many years,” he said.

“The goal is to forge long-term, strategic partnerships between the Lab and industry through understanding the technical capabilities and needs of each partner.”

Having worked with the geothermal development at Fenton Hill and with several collaborative geophysical research projects involving national laboratories, the oil and gas industry, and universities, House said the industrial fellowship allows him to combine his interests and experiences with the chance to continue learning about research and technologies at the Lab.

“The goals and interests of the two organizations are complementary in terms of technical needs and abilities and organizational goals,” said House. “The Laboratory generally carries out fairly long-term studies and research, while Chevron often needs solutions to more immediate problems. These differences create opportunities and challenges for the Chevron-Los Alamos collaborations.”

House added that Chevron’s projects not only provide a pool of non-DOE funding, but also opportunities to apply the Laboratory’s skills and technologies to solve problems that satisfy an important national need.

For more information about the Industrial Fellows Program, contact John Mott at 5-0883 or jmott@lanl.gov.

— Mig Owens

Setbacks help LANL Star succeed

Engineer and LANL Star Anita Carrasco said she'll never forget her first hydrodynamic assembly. "I'd love to say that it was memorable because everything turned out exactly how I had planned, but that wasn't the case," she said. "In fact, nothing went right! Every time I look back on that assembly and the firing site disaster that ensued, I just shake my head, but now I realize that it was the best thing that could have happened to me."

She said she believes she became a better engineer because of the setbacks she encountered. "I learned that some of the best lessons are gained when we fail."

Carrasco joined the Lab in 2002 with a bachelor's degree in civil and structural engineering from New Mexico State University. After serving as an assembly engineer for the Device Assembly and Engineering team, she became part of the Life Extension Project System Qualification Program as a weapon assembly engineer.

In addition to succeeding at her full-time job, the hard-working Carrasco completed a master's degree in mechanical engineering from the University of New Mexico and, with the support of her group leaders, Joe Martinez and Leland Maez, enrolled in UNM's Executive Master of Business Administration program. She expects to graduate this month.

Carrasco now supervises the assembly facilities responsible for building most of the local engineering tests, the hydrodynamic test, and other assemblies, and she also manages the facility's resources.

Carrasco said that although she's deeply honored that the Lab's Women's Employee Resource Group named her a LANL Star, she believes she couldn't have succeeded on her own. "I am grateful to my family; my managers, who allowed me to pursue my degrees while working; that giant bottle of ibuprofen that got me through my first hydro; and my division leader, Ed Rodriguez, who took the time to convince me that getting my MBA was the right thing to do."

— Tatjana K. Rosev



Sandra Valdez

Anita Carrasco uses the FARO Arm Coordinate Measuring Machine, which provides extremely accurate measurements of complex parts in support of the Lab's weapons program.



Upgrade to Concur Travel Systems begins in November

The Concur Travel System will be upgrading to a new Concur interface, Concur Travel and Expense. This is part of an ongoing strategy to automate and improve the Concur Travel System. The phased Labwide rollout is scheduled to begin in November. See the Travel Home Page for more information.

<http://cfo.lanl.gov/travel/default.shtml>

Sexual harassment prevention training deadline October 31

Don't forget to take the mandatory sexual harassment prevention training course.

All Los Alamos National Security, LLC employees and managers must take the initial online sexual harassment prevention training by October 31. The training will cover how to identify and resolve situations requiring sexual harassment-related judgment and how to get help when unsure of the best course of action.

To access the training, go to the Virtual Training Center Web site.

PerforM Workbench and employees' skills profiles now linked

Managers and employees can now link directly from an employee's PerforM Workbench performance document to the skills profile maintained in the Workforce Capabilities Initiative database. During performance planning, managers and employees are encouraged to discuss employee capabilities and potential developmental opportunities as they set goals for the review period.

Employee Open Enrollment information sessions scheduled

Information sessions begin October 13 for active Los Alamos National Security, LLC employees regarding the changeover to a new health-care provider in 2010.

The first three sessions are in the Physics Building Auditorium. Additional sessions continue October 14 in the Jemez and Cochiti rooms of the Oppenheimer Study Center and into the following week at other locations around the Laboratory. The Benefits Office in Human Resources Division hosts the information sessions.

Open Enrollment 2009 for calendar year 2010 for LANS employees is November 2 to December 4. Employees and retirees are required to enroll in an offered medical plan so that they and their dependents can receive medical insurance during 2010.

On January 1, 2010, Blue Cross Blue Shield of New Mexico will become the Laboratory's medical insurance carrier, replacing United Healthcare and Anthem Blue Cross.

To read the complete schedule of information sessions, go online to <http://www.lanl.gov/worklife/benefits/open/sessions.shtml>.

New Global Security Directorate jobs advertised

The Global Security Directorate is restructuring its programs, and as a result, some new positions are open to the workforce and externally.

Global Security Directorate programs are organized around nine mission areas that directly tie the Lab's core capabilities to national needs. The specific program areas and associated job postings are the following:

- Nuclear Nonproliferation
- Cyber Systems
[See Job No. 218270]
- Space Systems
[See Job No. 218268; 218269]
- Intelligence Analysis, Integration, and Exploitation
- Warfighter Support
[See Job No. 218276]
- Counter Terrorist Tactics
[See Job No. 218273; 218271]
- Countering Weapons of Mass Effect
[See Job No. 218274; 218275]
- Event Response
[See Job No. 218277]
- Resilient Global Infrastructure
[See Job No. 218272]

To view a list of these and other jobs open at the Lab, go online to <http://www.hr.lanl.gov/JobListing/index.aspx?JobType=LANL&RecScope=External>.

October service anniversaries

Find the October service anniversaries online at <http://www.lanl.gov/news/currents/2009/oct/anniversaries.shtml>.

In Memoriam

- Andrew J. Giger, 82, died August 4
- Santiago (Jim) Bustamante, 85, died August 16
- Richard C. Walther, 75, died September 5
- John W. Schroer Jr., 67, died September 26

Los Alamos Neutron Science Center

Conceived by Louis Rosen in the 1960s, the Los Alamos Neutron Science Center (LANSCE) was formally dedicated in 1972 and continues to serve the nation as a premier national research facility for basic and applied science.

Originally the Los Alamos Meson Physics Facility, LANSCE attracts some of the world's best scientific talent, as well as trains students to become the next generation of top engineers and scientists, said LANSCE Director Kurt Schoenberg.

The heart of LANSCE is the high-intensity linear proton accelerator (LINAC) that stretches for one-half mile eastward. It produces beams of protons with energies of up to 800 million electron volts. After almost four decades, the LINAC is still one of the most intense sources of protons in the world. These protons are accelerated to a blistering 84 percent the speed of light before being smashed into a heavy metal target containing neutron-rich atoms. The protons blast these atoms apart releasing torrents of neutrons.

Neutrons, which have no net electric charge and can pass through materials without the side effects of charged particles, are ideal for studying nuclear and materials physics. As Rosen said, "Whether nuclear energy is used for bombs, for generating electricity, or for any number of other purposes, the basic ingredient in the production of nuclear energy is neutrons. So one really needs . . . to maintain expertise and growing knowledge in neutron nuclear science and neutron technology."

Using protons and neutrons, LANSCE provides the National Nuclear Security Administration with an efficient, cost-effective, and timely means to meet its Stockpile Stewardship mission. The facility, where classified research on stockpile materials and components takes place, supports all NNSA laboratories and the United Kingdom's Atomic Weapons Establishment, addresses the growing concern of nuclear proliferation, and contributes to developing tools for accurate nuclear forensics, Schoenberg said.

LANSCE also supports the U.S. Department of Energy's Advanced Fuel Cycle Initiative by developing a new class of safer, cleaner, and more proliferation-resistant fuels—fuels the nation needs to provide energy security and independence, protect the environment, and impede nuclear terrorism.

Schoenberg noted that LANSCE is critical to the National Isotope Program. "It is one of two accelerator-based isotope production facilities in the United States providing isotopes that are not commercially available," he said. "LANSCE's isotopes are used in millions of medical procedures each year and reduce the nation's dependence on foreign isotope sources."

LANSCE remains the only U.S. source for producing ultracold neutrons that enable revolutionary research on cold and ultracold neutrons, neutrinos, and nuclear astrophysics, thus keeping the United States in the forefront of fundamental nuclear physics.

LANSCE also is a national user facility essential to the nuclear, materials, and biological sciences. For example, LANSCE research has revealed new discoveries about the mechanisms of cholera transmission that could lead to new disease prevention and treatment.

And it seems LANSCE will get a facelift as it continues to play a major role in scientific research. On September 28, LANSCE received Critical Decision-1 approval from the NNSA for the LANSCE Refurbishment Project, which "will refurbish, repair, replace, and modernize equipment and major components of the LINAC to meet Defense Programs operating requirements for the next two decades."

— Tatjana K. Rosev



Robb Kramer

An aerial view of the LANSCE facility looking East. The high-intensity linear proton accelerator (LINAC) stretches for one-half mile eastward and is still one of the most intense sources of protons in the world.

Louis Rosen's Legacy

Laboratory Senior Fellow Emeritus Louis Rosen may have been small in stature, but he was a giant among nuclear physics researchers. Rosen was the driving force behind the development of the Los Alamos Meson Physics Facility (LAMPF) and headed the facility from its inception in 1972 until 1986. He died recently at the age of 91, but because of his efforts, he lives on in the hearts of Lab employees and members of the scientific community as the “father” of the linear accelerator at the Laboratory’s Los Alamos Neutron Science Center facility, widely known as LANSCE.

Rosen was born in New York City on June 10, 1918. After receiving his doctorate in physics from Pennsylvania State University, he came to Los Alamos in 1944, where he worked on the Manhattan Engineering District’s Project Y. His early work in neutron cross-section measurements and nuclear-test diagnostics set the standard for the Lab.

Rosen chose to stay on in the “Atomic City” after the Manhattan Project ended, and he saw the Lab through a number of transitions in the more than six decades that he worked at LANL.

In a 2003 *NewsBulletin* interview, he remembered how the Lab underwent a period of transition in the late 1950s as the result of “national malaise” about nuclear physics. The Lab was forced to refocus its mission, and new nuclear probes, such as high-intensity pion beams, were brought into the scientific arena, Rosen said.

Together with former Lab director Norris Bradbury, Rosen persuaded federal agencies and members of Congress, as well as then-New Mexico Senator Clinton B. Anderson, to support a linear accelerating structure that used a proton beam to create another highly intense beam of particles known as pi mesons, or “pions.” Such an accelerator would produce proton beams 1,000 times greater in intensity than any accelerator available at the time, Rosen said, making it the most capable—and most expensive—nuclear physics facility ever contemplated.

Won over by Rosen’s vision of a facility that would be a state of the art nuclear research center open to the world’s scientific community, Congress funded the Los Alamos Meson Physics Facility (LAMPF).

LAMPF’s importance to the nation grew in the early 1970s, when policymakers discussed a moratorium, perhaps even a ban, on nuclear weapons testing. “This development

would put a high premium on the facility if it could serve as an intense source of spallation neutrons in the maintenance of a nuclear stockpile under non-test conditions,” Rosen recalled.

In 1995, with the closeout of the nuclear physics user program and the increased national need for neutrons, the Laboratory refocused the mission of its linear accelerator complex. The new mission called for the development and use of protons and spallation neutrons for research in radiation damage, condensed-matter physics, material science, nuclear science, proton radiography, and the production of medical radioisotopes. As a result, the accelerator complex was renamed the Los Alamos Neutron Science Center, or LANSCE.

Convinced of LANSCE’s continuing importance, Rosen remained at the facility, where he served as an inspiration and mentor to students, researchers, and managers alike.

Rosen received many awards and honors throughout his career. In 1963, he won the E. O. Lawrence Award, and in 2002, he received the Los Alamos National Laboratory Medal — the highest award the Laboratory bestows upon an individual.

When Rosen died in his sleep on August 20, he left behind family members, coworkers, students, political leaders, and the scientific community worldwide to mourn his passing. His last workday at the Laboratory was August 13.

— Tatjana K. Rosev

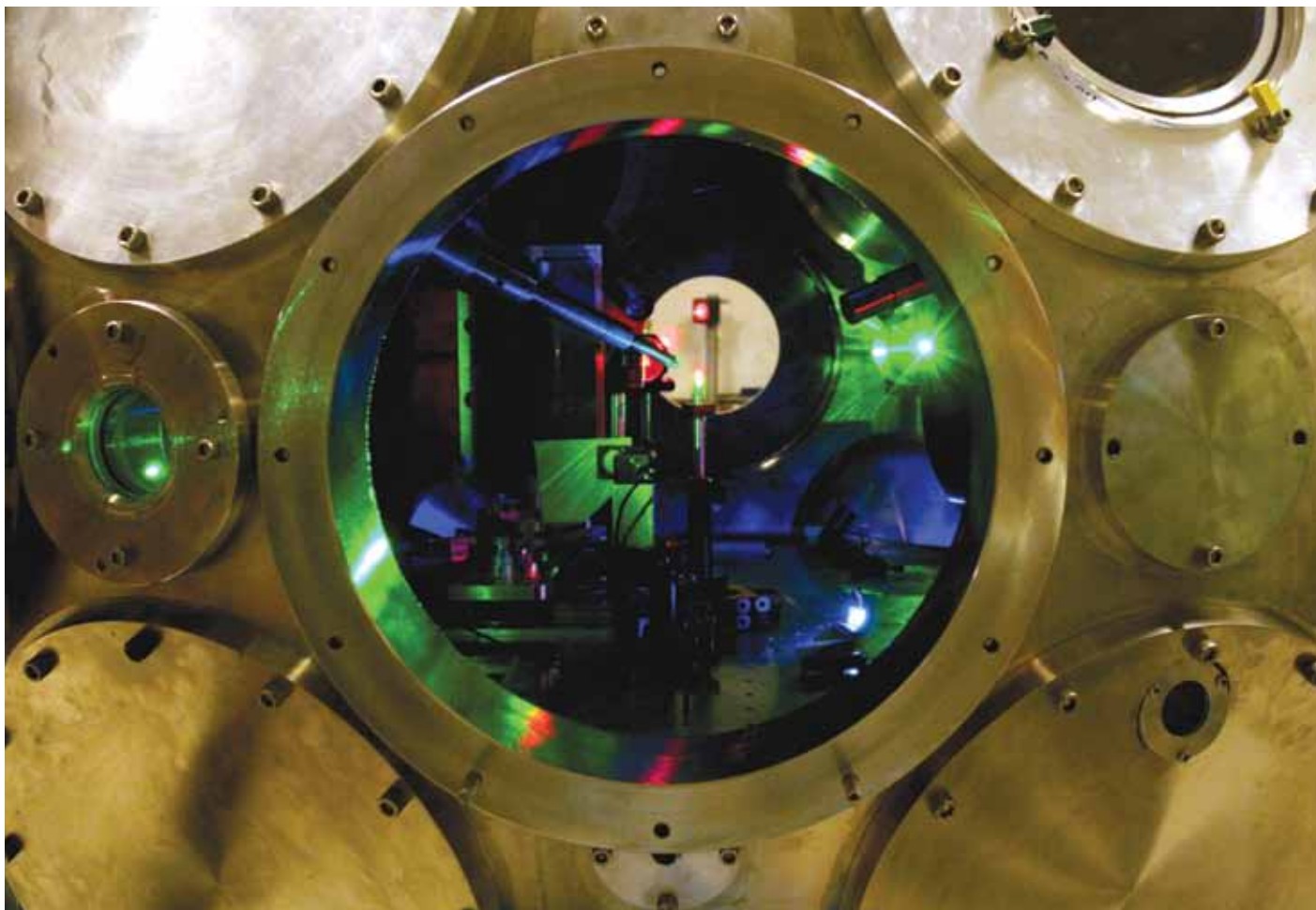


Louis Rosen, the “father” of the linear accelerator at the Laboratory’s LANSCE facility.

File photo

Or Current Resident

Looking in on Trident



Robb Kramer

The Laboratory's Trident Laser Facility at Technical Area 35 is an extremely versatile neodymium glass laser system dedicated to high energy density physics research and fundamental laser-matter interactions. The Trident laser system consists of three high-energy beams that can be delivered into two independent target experimental areas. The target areas are equipped with an extensive suite of diagnostics for research in ultra-intense laser-matter interactions, dynamic material properties, and laser-plasma instabilities. The photo shows the inside of the 5-foot diameter vacuum chamber in the north target area of the Trident facility,

as seen through a 16-inch port with the vacuum flange removed. Several diagnostics and low-power alignment lasers are visible pointing toward a target at the center of the chamber. The target and diagnostics are being prepared for a relativistic laser-matter interaction experiment using the Trident 200-terawatt laser beam. After the vacuum chamber is closed and evacuated, the target and the laser receive a final alignment. It takes nearly an hour to prepare for an experiment that will last only 500 femtoseconds, which is less time than it will take for light to travel the distance of the period at the end of this sentence.

CURRENTS is a monthly publication of the Communications Office, Los Alamos National Laboratory.

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Los Alamos National Laboratory is operated by Los Alamos National Security, LLC for the Department of Energy's National Nuclear Security Administration

CURRENTS

P.O. Box 1663
Mail Stop C177
Los Alamos, NM
87545

LALP-09-0010

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